TEXAS STATE VITA

I. Academic/Professional Background

A. Name and Title

Name: Dr. Xiaoxi Shen Title: Assoc Professor of Instruction

B. Educational Background

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
PHD	2019	Michigan State University	Statistics	
MS	2014	Michigan State University	Statistics	
BS	2012	Shanghai University	Mathematics and Applied Mathematics	

C. University Experience

Position	*University*	*Dates*
Assistant Professor, Department of Mathematics	Texas State University. San Marcos, TX, United States	September 2021 - Present
Postdoc Associate, Department of Biostatistics	University of Florida. Gainesville, FL, United States	August 2019 - July 2021

II. TEACHING

B. Courses Taught:

Texas State University:

MATH 2328 - ELEMENTARY STATISTICS

MATH 3305 - INTRO PROB & STATS

MATH 3306 - INTRO TO STATISTICAL METHODS

MATH 4336 - STUDIES IN APPLIED MATH

MATH 4336 - STUDIES APPL MATH

MATH 5199B - THESIS

MATH 5305 - ADV PROB & STATS

MATH 5315 - MATH STATS

MATH 5345 - REGRESSN ANALYSIS

MATH 5376E - DATA SCIENCE

MATH 5399A - THESIS

MATH 5399B - THESIS

MATH 7325 - STATISTICS I

MATH 7335 - STATISTICS II

MATH 7385 - INDPNDT STUDY MATH

STAT 5345 - REGRESSION ANALYSIS

STAT 7325 - STATISTICS I

STAT 7335 - STATISTICS II

C. Directed Student Learning (i.e. theses, dissertations, exit committees, etc.):

Supervisor / Chair, Applied Research Project, "Variable Importance Identification Through Lazy Training for Binary Classification", Status: In Progress. (May 26, 2025 - Present).
Student(s): Eshan Kabir, Undergraduate.
Luke Pennella, Undergraduate.
Anand Singh, Undergraduate.

Member, Dissertation, "Multi-Modal Learning for Human Action Recognition", Status: Completed. (May 22, 2023 - Present). Computer Science, Texas State University.
Student(s): Jianyuan Ni, Doctoral.

Member, Master's Thesis, "Explore Fast Training Algorithm for Multinomial Logistic Regression", Status: Completed. (January 30, 2023 - Present). Mathematics, Texas State University.
Student(s): Jialong Li, Graduate, Master of Science.

Supervisor / Chair, Master's Thesis, "Neural Network Based Kernels for Regression and Classification Problems", Status: Completed. (March 4, 2024 - May 15, 2026). Mathematics, Texas State University.
Student(s): Cameron Esponge, Graduate.

Supervisor / Chair, Applied Research Project, "Applications of Deep Learning Models in Genetic Risk Prediction via Summary Data", Status: Completed. (June 20, 2024 - December 16, 2025).
Student(s): Olivia Bley.
Jason Cheng.
Ethan Poon.
Joseph Zhang.
Angela Wang.
Elena Xiao.
Kalia Wang.
Adriana Vigo.

Member, Master's Thesis, "Identification of Dichotomous Communities in Sighed Graph Using Coherence-Based Metrics", Status: Completed. (July 2, 2025). Mathematics, Texas State University.
Student(s): Andrew Baas, Graduate, Master of Science.

Supervisor / Chair, Applied Research Project, "Goodness-of-fit Tests Based on Deep ReLU Networks", Status: Completed. (October 2023 - November 2024). Mathematics, Texas State University.
Student(s): Xiaoming Wang, Undergraduate.

Supervisor / Chair, Applied Research Project, "Estimating Genetic Heritability", Status: Completed. (June 2023 - November 2024).
Student(s): Elizabeth Lei.
Olivia Bley.
Andy Zhou.
Yury Guardado.

Supervisor / Chair, Applied Research Project, "Observed Best Prediction for Genetic Risk", Status: Completed. (January 2023 - September 2024). Mathematics, Texas State University.
Student(s): Sarah Kilgard, Undergraduate.

Supervisor / Chair, Applied Research Project, "Consistency and Rate of Convergence for Deep ReLU Neural Networks", Status: Completed. (March 2022 - August 2023). Mathematics, Texas State University.
Student(s): Jesus Espinoza, Undergraduate.

Member, Master's Thesis, "Analyzing Cohort Studies with Left-truncated and Interval-censored Data: A New Model-based Linear Rank-type Test", Status: Completed. (February 9, 2022 - October 25, 2022). Mathematics, Texas State University.
Student(s): Yi Wang, Graduate, Master.

D. Courses Prepared and Curriculum Development:

MATH 7375F Multivariate Data Analysis, New Course, Texas State University.
Proposed: August 2023 - Present.

MATH 7375I Advanced Statistical Learning, New Course, Texas State University. Proposed: August 2023 - Present.

MATH 7375E Computational Statistics, New Course, Texas State University. Proposed: August 2023 - Present.

Bachelor of Science (B.S.) Major in Data Science, New Degree Program, Texas State University. Approved: January 2024 - August 2025.

III. SCHOLARLY/CREATIVE

A. Works in Print (including works accepted, forthcoming, in press):

2. Articles:

a. Refereed Journal Articles:

Wang, A., Xiao, E., Cheng, J., & Shen, X. (2026). Genetic Risk Predictions Using Deep Learning Models with Summary Data. *Frontiers in Bioinformatics*. Published.

Shen, X., & Lu, Q. (2025). Consistency of Restricted Maximum Likelihood Estimators in High-Dimensional Kernel Linear Mixed Effects Models with Applications to Estimating Genetic Heritability. *Mathematics*. Published.

Shen, X., & Espinoza, J. (2025). Consistency and Rate of Convergence for Deep ReLU Neural Networks. *Journal of Statistical Theory and Practice*. Published.

Sakia, G., Shen, X., Liu, Y., Yang, K., Wu, H., Lingpeng Lu, L., … Zhu, J. (2025). Associations of serum choline, betaine and trimethylamine N-oxide with gestational diabetes mellitus among Chinese pregnant women. *BMJ Nutrition, Prevention, & Health*, 8(1):e001111. https://doi.org/Impact factor(2024): 3.3

Hou, T., Shen, X., Zhang, S., Liang, M., Chen, L., & Lu, Q. (2024). AIGen: An Artificial Intelligence Software for Complex Genetic Data Analysis. *Briefings in Bioinformatics*, *25*(6). https://doi.org/https://doi.org/10.1093/bib/bbae566

Shen, X., & Wang, X. (2024). An Exploration of Testing Genetic Associations Using Goodness-of-Fit Statistics Based on Deep ReLU Neural Networks. *Frontiers in Systems Biology*, *4*. Published. https://doi.org/https://doi.org/10.3389/fsysb.2024.1460369

Lamkin, K., Xu, L., Wang, K., Liu, Y., Yang, K., Wu, H., … Zhu, J. (2024). Choline and Betaine Intakes during Pregnancy in Relation to Risk of Gestational Diabetes Mellitus among Chinese Women. *British Journal of Nutrition*. Published.

Zhu, J., Saikia, G., Zhang, X., Shen, X., & Kahe, K. (2024). One-carbon Metabolism Nutrients, Genetic Variation, and Diabetes Mellitus. *DIABETES METAB J*, 48(2):170–183. https://doi.org/doi: 10.4093/dmj.2023.0272. Impact factor(2024): 6.8

Shen, X., Jiang, C., Sakhanenko, L., & Lu, Q. (2023). Asymptotic Properties of Neural Network Sieve Estimators. *Journal of Nonparametric Statistics*. Published. https://doi.org/10.1080/10485252.2023.2209218

Tang, M., Hou, T., Tong, X., Shen, X., Zhang, X., Wang, T., & Lu, Q. (2022). Fast heritability estimation based on MINQUE and batch training. *Briefings in Bioinformatics*, *23*(3). Retrieved from https://academic.oup.com/bib/article/23/3/bbac115/6563939 https://academic.oup.com/bib/article/23/3/bbac115/6563939

Shen, X., Jiang, C., Wen, Y., Li, C., & Lu, Q. (2022). A Brief Review on Deep Learning Applications in Genomic Studies. *Frontieres in Systems Biology*. Published. Retrieved from https://www.frontiersin.org/articles/10.3389/fsysb.2022.877717/full https://www.frontiersin.org/articles/10.3389/fsysb.2022.877717/full

Shen, X., Wen, Y., Cui, Y., & Lu, Q. (2021). A Conditional Autoregressive Model for Genetic Association Analysis Accounting for Genetic Heterogeneity. *Statistics in Medicine*. Published. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1002/sim.9257 https://onlinelibrary.wiley.com/doi/full/10.1002/sim.9257

Shen, X., Jiang, C., Sakhanenko, L., & Lu, Q. (2021). A Goodness-of-fit Test Based on Neural Network Sieve Estimators. *Statistics and Probability Letters*, *174*, 109100. Retrieved from https://www.sciencedirect.com/science/article/pii/S0167715221000626?casa_token=FCmoMuwqhlAAAAAA:E_TcS_m1IiZt5kSZB1PCoLeFTvDJ0RukcvGodCkqMe2PZGw_Ami3PBkt4zjw86yfzFj0bO8Mqg https://www.sciencedirect.com/science/article/pii/S0167715221000626?casa_token=FCmoMuwqhlAAAAAA:E_TcS_m1IiZt5kSZB1PCoLeFTvDJ0RukcvGodCkqMe2PZGw_Ami3PBkt4zjw86yfzFj0bO8Mqg

Wen, Y., Shen, X., & Lu, Q. (2018). Genetic Risk Prediction Using a Spatial Autoregressive Model. *Statistics in Medicine*, *37*, 3764–3775. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1002/sim.7832?casa_token=GTt1P-pNn8EAAAAA%3AR7y8lPCEwdspgY5PKt6nSgHuMe-Y8bUiw6ltxdiaHidTOySC3iiuUoJR6x0ihwR3JGXc1jyZIednUus https://onlinelibrary.wiley.com/doi/full/10.1002/sim.7832?casa_token=GTt1P-pNn8EAAAAA%3AR7y8lPCEwdspgY5PKt6nSgHuMe-Y8bUiw6ltxdiaHidTOySC3iiuUoJR6x0ihwR3JGXc1jyZIednUus

Shen, X., & Lu, Q. (2018). Joint Analysis of Genetic and Epigenetic Data Using a Conditional Autoregressive Model. *BMC Genetics*, *19*, 51–54. Retrieved from https://bmcgenomdata.biomedcentral.com/articles/10.1186/s12863-018-

0641-8 https://bmcgenomdata.biomedcentral.com/articles/10.1186/s12863-018-0641-8

Shen, X. (2017). Direct Care Workforce training: Internet Accessibility and Acceptance. *Journal of Gerontological Nursing*. Published.

Shen, X. (2017). Do Canes or Walkers Make Any Difference? Nonuse and Fall Injuries. *The Gerontologist*. Published.

Yang, K., & Shen, X. (2017). On the Selection Consistency of Bayesian Structured Variable Selection. *Stat*, *6*, 131–144. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1002/sta4.141 https://onlinelibrary.wiley.com/doi/abs/10.1002/sta4.141

B. Works Not in Print:

1. Papers Presented at Professional Meetings:

Shen, X., Joint Statistical Meetings, "Variable Importance Identification Through Lazy Training for Binary Classification," Boston, United States. (August 2, 2026).

Shen, X., 45th Annual Conference of Texas Statisticians (COTS), "Variable Importance Identification Through Lazy Training for Binary Classification," Austin, TX, United States. (April 11, 2026).

Shen, X., Joint Statistical Meetings, "Consistency of REML Estimators in High-Dimensional Kernel Linear Mixed Models," American Statistical Association, Nashville, TN, United States. (August 4, 2025).

Shen, X., Conference of Texas Statisticians-2024, "Hypothesis Testing Using Neural Networks with An Application to Genetic Association Studies," Houston Methodist Research Institute. (May 10, 2024).

Shen, X., Joint Statistical Meetings, "Significance Tests Based on Sieve Quasi-likelihood Ratio Test Using Neural Networks with Application to Genetic Association Studies," Washington DC, DC, United States. (August 11, 2022).

2. Invited Talks, Lectures, and Presentations:

Shen, X., Machine Learning Reading Seminar, "Variable Importance Identification Through Lazy Training for Binary Classification." (February 13, 2026).

Shen, X., MCBIOS 2026, "Variable Importance Identification Through Lazy Training for Binary Classification with Application in Genetic Association Studies," Tampa, FL, United States. (March 29, 2026).

Shen, X., Machine Learning Reading Seminar, "A Primer on Statistical/Machine Learning Theory." (October 31, 2025).

Shen, X., Texas Tech University Statistics Seminar, "Consistency of REML Estimators in High Dimensional Kernel Linear Mixed Models." (April 29, 2024).

Shen, X., Numerical Methods for Data Science and Engineering, "What are Diffusion Models," Texas State University. (March 29, 2024).

Shen, X., Texas State University Statistics Seminar, "Kernel: A Bridge Between Linearity and Nonlinearity." (February 2, 2024).

Shen, X., Li, J., Texas State University Department of Mathematics Machine Learning Seminar, "Difference Between Gradient Descent and Stochastic Gradient Descent," San Marcos, TX, United States. (November 17, 2023).

Shen, X., Texas State University Department of Mathematics Machine Learning Seminar, "Linear Regression and Empirical Risk Minimization," San Marcos, TX, United States. (September 22, 2023).

Shen, X., Texas State University Department of Mathematics Colloquium, "From Classical to Modern Statistics: The Role of Dimensionality," San Marcos, TX, United States. (September 1, 2023).

Shen, X., University of North Carolina at Charlotte Statistical Seminar, "Consistency of REML estimators in High-Dimensional Kernel Linear Mixed Models," Charlotte, NC, United States. (March 10, 2023).

Shen, X., The 15th International Conference on Computational and Methodological Statistics, "Significance Tests Based on Sieve Quasi-likelihood Ratio Test Using Neural Networks with Application to Genetic Association Studies," London, United Kingdom. (December 19, 2022).

Shen, X., Numerical Methods for Data Science and Engineering, "Statistical Hypothesis Testing Using Artificial Neural Networks," Texas State University. (November 11, 2022).

Shen, X., Texas State University Statistics Seminar, "Consistency of REML Estimators in High-Dimensional Kernel Linear Mixed Models," San Marcos, TX, United States. (September 9, 2022).

Shen, X., Texas State University Department of Mathematics Graduate Expo, "A Conditional Autoregressive Model for Genetic Association Studies of Sequencing Data." (November 5, 2021).

Shen, X., Texas State University Statistics Seminar, "Significance Tests Based on Sieve Quasi-likelihood Ratio Test Using Neural Networks with Application to Genetic Association Studies." (October 22, 2021).

Shen, X., 2019 ICSA Applied Statistics Symposium, "A Kernel-Based Neural Network for High-dimensional Genetic Risk Prediction Analysis," Raleigh, United States. (June 2019).

Shen, X., 2019 ICSA Applied Statistics Symposium, "Asymptotic Properties of Neural Network Sieve Estimators," Raleigh, United States. (June 2019).

5. Other Works not in Print:

a. Works "submitted" or "under review":

Journal Articles:

Birrell, J., & Shen, X. (Submitted / Under Review). Statistical Guarantees for Optimal-Transport-Regularized DRO. (2026)

Wang, A., & Shen, X. (Submitted / Under Review). Improving Cognitive Impairment Prediction in Alzheimer's Disease Using Tabular Diffusion Augmentation and Late Fusion Deep Learning. (July 27, 2026)

Singh, A., Pennella, L., Kabir, E., & Shen, X. (Submitted / Under Review). Variable Importance Identification Through Lazy Training for Binary Classification. *Journal of Machine Learning Research*. (July 24, 2026)

Shen, X., Tong, X., Xue, W., Liang, M., & Lu, Q. (Submitted / Under Review). An Efficient Kernel-Based Neural Network for High-dimensional Genomic Data Analysis. *Biometrics*. (July 1, 2026)

Ge, H., Shen, X., Hou, T., Xue, W., Chen, L., & Lu, Q. (Submitted / Under Review). A Penalized Kernel Neural Network for Complex Genetic Risk Prediction Analysis. *Statistics in Medicine*. (May 7, 2026)

Shen, X. (Submitted / Under Review). A Sieve Quasi-likelihood Ratio Test for Neural Networks with Applications to Genetic Association Studies. *Journal of Machine Learning Research*. (March 23, 2026)

Bley, O., Lei, E., Zhou, A., & Shen, X. (Submitted / Under Review). Estimating Broad Sense Heritability via Kernel Ridge Regression. *Metrika*. (November 3, 2024)

b. Works "in progress":

Journal Articles:

Ge, H., Shen, X., & Lu, Q. (In Preparation; Not Yet Submitted). A Generalized Kernel Neural Network For Binary And Counts Outcome Prediction.

c. Other Works Not in Print:

Posters:

Shen, X., New Research Conference, "Consistency of REML Estimators in High-Dimensional Kernel Linear Mixed Models," IMS, Nashville, TN, United States. (July 31, 2025).

Shen, X., Lu, Q., Applied Statistics Symposium 2023, "Consistency of REML estimators in High-Dimensional Kernel Linear Mixed Models," International Chinese Statistical Association, Ann Arbor, MI, United States. (June 12, 2023).

Zhu, J., Shen, X., 2023 Health Scholar Showcase, "Folate Intake and Genetic Variation in Association with Risk of Diabetes: A Prospective Cohort Study with 15-year Follow-up," TXST Translational Health Research Center, San Marcos, TX, United States. (March 3, 2023).

C. Scholarly / Creative Grants and Contracts:

1. Funded External Grants and Contracts:

Zhu, Jie (Principal), Shen, Xiaoxi (Co-Principal), Wang, Kaipeng (Co-Principal). Pork intake, Genetic Susceptibility, and Social Determinants in Association with Risk of Diabetes among a Population-based Prospective Study of US Hispanics/Latinos, National Pork Board, Private / Foundation / Corporate, $55,000.00. (Submitted: April 23, 2025, Funded: September 1, 2025 - Present). Grant.

Yang, Yong (Principal), Keller, Thomas M (Co-Principal), Sun, Shuying (Supporting), Dochtermann, Anton (Supporting), Oh, Suho (Supporting), Shen, Xiaoxi (Supporting), Xiao, Jun (Supporting). NSF REU Site: Algebra, Combinatorics, and Statistics (#: 2447229), NSF, Federal, $271,568.00. (Submitted: August 2024, Funded: April 1, 2025 - March 28, 2028). Grant.

Zhu, Jie (Principal), Meireles, Christiane (Co-Principal), Shen, Xiaoxi (Supporting), Du, Yan (Supporting). Diet, Genetic risk, and Physical Activity in Association with Risk of Diabetes, Lone Star Collaborative Health Research Pilot Award, Institutional (Higher Ed), $100,000.00. (Funded: August 30, 2027). Grant.

Fulton, Lawrence V (Principal), Villagran, Melinda Morris (Co-Principal), Bing Zhou (Co-Principal), Mendez, Francis A (Co-Principal), Ekin, Tahir (Co-Principal), Qasem, Apan Muhammad (Co-Principal), Konur, Dincer (Supporting), Alanis, Emmanuel (Supporting), Zihagh, Fereshteh (Supporting), Dong, Zhijie (Co-Principal), Shen, Xiaoxi (Supporting), De Nadai, Alessandro Stevens (Supporting), Zhu, Ye (Co-Principal), Hewitt, Barbara A (Co-Principal), Valles Molina, Damian (Supporting), White, Alexander (Supporting), Dolezel, Diane M (Supporting), Ioudina, Vera (Supporting), Islam, Tanzima Z (Supporting), Lee, Chul Ho (Supporting), Metsis, Vangelis (Supporting), Moradi, Masoud (Supporting), Gao, Ju (Supporting), Li-Jen, Lester (Supporting), Jones, Dustin (Supporting), Pham, Vung (Supporting), Holt, Melinda (Supporting), Kyung An, Min

(Supporting), Islam, ABM (Supporting), Cho, Hyuk (Supporting), Liu, Quigzhoung (Supporting), Liang, Fan (Supporting), Topinka, Joseph Baar (Supporting). The Accelerating Credentials of Purpose and Value for the Texas Innovation Corridor (TIC) Consortium Grant, THECB, State, $1,450,000.00. (Submitted: November 2021, Funded: February 2022 - October 2022). Grant.

2. Submitted, but not Funded, External Grants and Contracts:

Shen, Xiaoxi (Principal), Percent Contribution: 70%, Zhu, Jie (Co-Principal), Percent Contribution: 30%. Deep Learning Assisted Statistical Hypothesis Testing and Precision Nutrition, NSF, Federal, $451,322.00. (Submitted: December 12, 2025, Funded: September 1, 2026 - August 31, 2029). Grant.

Shen, Xiaoxi. CAREER: Bridging Deep Learning and Mixed-Effects Models: Statistical Guarantees for Explainable AI, NSF, Federal, $543,992.00. (Submitted: July 21, 2026). Grant.

Shen, Xiaoxi. CAREER: Machine Learning Assisted Statistical Inference, NSF, Federal, $602,523.00. (Submitted: July 21, 2025). Grant.

Zhu, Jie, Percent Contribution: 65%, Shen, Xiaoxi (Co-Principal), Percent Contribution: 25%, Wang, Kaipeng (Co-Principal), Percent Contribution: 10%. Diet Quality, Genetic Susceptibility, and Social Determinants in Association with Risk of Diabetes among the U.S. Hispanic Adults, New York Regional Center for Diabetes Translation Research, Other, $50,000.00. (Submitted: February 14, 2025). Grant.

Lee, Young Ju (Principal), Lee, Chul-Ho (Co-Principal), Ojeda-Ruiz, Ivan (Co-Principal), Shen, Xiaoxi (Co-Principal). NRT: Training Interdisciplinary Students to Design Efficient and Scalable Solutions to Challenging Applications in Math, Statistics, and Computer Science, National Science Foundation (NSF), Federal, $1,999,999.00. (Submitted: November 14, 2024). Grant.

Shen, Xiaoxi (Principal), Percent Contribution: 50%, Zhu, Jie (Co-Principal), Percent Contribution: 50%. MFAI: Deep Learning Assisted Statistical Hypothesis Testing and Precision Nutrition, NSF, Federal, $1,079,812.00. (Submitted: October 9, 2024). Grant.

Shen, Xiaoxi. Kernel Neural Networks for Analyzing Large-scale Alzheimer's Disease Genetic Data, NIH, Federal, $296,568.00. (Submitted: March 1, 2024). Grant.

Yang, Yong (Principal), Percent Contribution: 30%, Gao, Ju (Co-Principal), Percent Contribution: 25%, Jin, Tongdan, Percent Contribution: 15%, Dong, Wenquan, Percent Contribution: 15%, Shen, Xiaoxi, Percent Contribution: 15%. REU Site: Mathematical Foundation for Data Science and Engineering,

NSF, Federal, $352,270.00. (Submitted: September 2023, Funded: March 1, 2024 - February 28, 2024). Grant.

Czocher, Jennifer Ann (Principal), Melhuish, Kathleen Mary (Co-Principal), Shen, Xiaoxi (Co-Principal), White, Alexander (Co-Principal). Developing a Suitable Estimate for IRR for Sequential Data, National Science Foundation, Federal, $499,078.00. (Submitted: October 2023). Grant.

Shen, Xiaoxi. AMS-Simons Travel Grants Program, AMS-Simons Travel Grants Program, Private / Foundation / Corporate, $6,000.00. (Submitted: March 28, 2023). Grant.

Shen, Xiaoxi. Kernel Neural Networks for Analyzing Large-scale Alzheimer's Disease Genetic Data, NIH Sub-award from University of Florida, Federal. Grant.

Zhu, Jie (Principal), Percent Contribution: 50%, Metsis, Vangelis (Co-Principal), Percent Contribution: 40%, Shen, Xiaoxi (Supporting), Percent Contribution: 5%, Bishop, Nicholas (Supporting), Percent Contribution: 5%. One-carbon Metabolism Nutrients Intakes, Genetic Susceptibility, and Social Determinants in Association with Diabetes Incidence among the U.S. Hispanic Adults, The New York Regional Center for Diabetes Translation Research (NY-CDTR) Pilot and Feasibility (P&F) funding, Institutional (Higher Ed), $50,000.00. (Submitted: March 2, 2023). Grant.

Shen, Xiaoxi. Applications of Kernel Methods and Deep Neural Networks for Genetic Association Studies, Simons Foundation, Private / Foundation / Corporate, $42,000.00. (Submitted: January 25, 2023). Grant.

Shen, Xiaoxi. LEAPS-MPS: High-Dimensional Kernel Mixed Models for Genetic Risk Predictions and Association Studies, NSF, Federal, $215,646.00. (Submitted: January 20, 2023). Grant.

Shen, Xiaoxi. Statistical Inference Based on Deep Neural Networks, NSF Statistics Program, Federal, $294,484.00. (Submitted: December 13, 2022). Grant.

Whitten, Steven T (Co-Principal), Lewis, Karen A (Co-Principal), Libich, David S (Co-Principal), Oyajobi, Babatunde O (Co-Principal), Spooner, Melinda H (Supporting), Betancourt, Tania (Supporting), Carlos-Shanley, Camila (Supporting), Du, Liqin (Supporting), Fuess, Lauren Elizabeth (Supporting), Huertas Pau, Maria del Mar (Supporting), Irvin, Jennifer A (Supporting), Jacobs, Michael Isaac (Supporting), Kornienko, Alexander Vladimir (Supporting), Kerwin, Sean Michael (Supporting), Lewis, Lysle (Supporting), Lu, Yuan (Supporting), McLean, Robert J C (Supporting), Ngu, Hee Hiong (Supporting), Peterson, Ryan Loren (Supporting), Schilter, David (Supporting), Shen, Xiaoxi (Supporting), Wang, Lu (Supporting), Xue, Xiaoyu (Supporting). Texas Doctoral Bridge Program, National Institutes of Health, Federal, $3,158,966.00. (Submitted: October 10, 2022). Grant.

Shen, Xiaoxi. A New Deep Learning Tool for Alzheimer's Disease Genetic Data Analysis, NIH Sub-award from University of Florida, Federal. (Submitted: June 2022). Grant.

Shen, Xiaoxi. Theme 2: Interpretation and Association Detection Based on AI Methods, NSF AI Research Institute, Federal, $4,000,000.00. (Submitted: January 14, 2022). Grant.

Shen, Xiaoxi. A New Deep Learning Tool for Alzheimer’s Disease Genetic Data Analysis, NIH Sub-award from University of Florida, Federal. (Submitted: October 2021). Grant.

3. Funded Internal Grants and Contracts:

Zhu, Jie (Principal), Shen, Xiaoxi (Co-Principal), Bishop, Nicholas Joseph (Co-Principal), Metsis, Vangelis (Co-Principal). Exploring Interaction of One-carbon Metabolism Nutrients Intakes and Genetic Susceptibility on Risk of Metabolic Syndrome among Multi-ethnic US Adults with Diverse Socio-demographic, Biomedical, and Lifestyle Characters, Texas State University Multidisciplinary Internal Research Grant, Texas State University, $12,000.00. (Funded: August 24, 2022 - Present). Grant.

Shen, Xiaoxi. Risk Prediction and Association Analyses Using Kernel Methods for High-Dimensional Genetic Data, Research Enhancement Program, Texas State University, $8,000.00. (Funded: January 1, 2024 - May 31, 2025). Grant.

Zhu, Jie (Principal), Shen, Xiaoxi (Co-Principal), Metsis, Vangelis (Co-Principal). One-carbon Metabolism Nutrients Intakes, Genetic Susceptibility, and Social Determinants in Association with Diabetes Incidence among the U.S. Hispanic Adults: HCHS/SOL, TXST CADS 2024 Catalyst Research Awards, Texas State Center for Analytics and Data Science, Texas State University, $1,000.00. (Submitted: December 22, 2024, Funded: February 1, 2024 - December 31, 2024). Grant.

Shen, Xiaoxi. Interpretation of Deep Neural Networks from a Statistical Aspect with Application to Identify Alzheimer’s Disease Related Genes, Research Enhancement Program, Texas State University, $8,000.00. (Funded: January 1, 2022 - May 31, 2023). Grant.

4. Submitted, but not Funded, Internal Grants and Contracts:

Shen, Xiaoxi. Can Synthetic Data from Generative AI Models Improve Performance of Statistical Models in Genetics Research?, Research Enhancement Program, Texas State University, $12,000.00. (Submitted: October 7, 2025). Grant.

D. Scholarly / Creative Fellowships, Awards, Honors:

Award / Honor Recipient: 2024 Department of Mathematics Research Excellence Award.
October 2024 - December 2024

Award / Honor Recipient: New Faculty Collection Grant Funds, $1011.25.
October 2021

E. Scholarly / Creative Professional Development Activities Attended:

Conference Attendance, "The Thirty-Ninth Annual Conference on Neural Information Processing Systems." (December 2, 2025 - December 5, 2025).

Seminar, "LLM Training and Coding for Statistical Learning and Data Science," ASA SLDS. (November 5, 2025).

Seminar, "AI Agents for Biomedical DIscovery," ASA SSGG. (October 22, 2025).

Seminar, "Towards Interpretable and Trustworthy Network-Assisted Prediction," ASA SLDS. (September 23, 2025).

Seminar, "Trees and V's: Inference for Ensemble Models," ASA SLDS. (July 1, 2025).

Seminar, "Reinforcement Learning in the Dyadic Setting," ASA SLDS. (June 4, 2025).

Seminar, "Gene-environment interaction analysis: a high-dimensional analysis perspective," ASA SSGG. (April 21, 2025).

Seminar, "Revisiting Neural Network Approximation Theory in the Age of Generative AI," ASA-Section on Statistical Learning and Data Science. (January 22, 2025).

Seminar, "Statistical Methods for Spatial Transcriptomics," ASA Section on Statistical Genetics and Genomics. (September 23, 2024).

Conference Attendance, "Joint Statistical Meeting," ASA, Portland, OR, United States. (August 4, 2024 - August 7, 2024).

Workshop, "2024 NSF MPS Workshop for New Investigators," National Science Foundation and University of Florida. (July 7, 2024 - July 9, 2024).

Conference Attendance, "2024 Conference of Texas Statisticians." (May 9, 2024 - May 10, 2024).

Conference Attendance, "MCBIOS 2024," Atlanta, GA, United States. (March 23, 2024 - March 24, 2024).

Tutorial, "An Introduction to Mendelian Randomization," ASA Section on Statistical Genetics and Genomics. (February 12, 2024 - February 23, 2024).

Seminar, "Translating Polygenic Risk Scores in the Clinic: Promises and Challenges," ASA Section on Statistical Genetics and Genomics. (January 23, 2024).

Seminar, "Optimization-based Analysis of Sampling Algorithms," ASA Section on Statistical Learning and Data Science. (September 27, 2023).

Conference Attendance, "2023 ICSA Applied Statistics Symposium," Ann Arbor, MI, United States. (June 11, 2023 - June 14, 2023).

Conference Attendance, "15th International Conference of the ERCIM WG on Computational and Methodological Statistics," London, United Kingdom. (December 17, 2022 - December 19, 2022).

Conference Attendance, "SyDATA 2022: A Symposium to Highlight Data Science Research Conducted at Texas State University and to Build Collaborations among Faculty," Texas State University. (September 30, 2022).

Conference Attendance, "Joint Statistical Meetings," ASA, Washington DC, DC, United States. (August 6, 2022 - August 11, 2022).

Seminar, "Interpreting Deep Neural Networks Towards Trustworthiness," ASA. (March 15, 2022).

Conference Attendance, "2021 Conference of Texas Statisticians." (October 9, 2021).

IV. SERVICE

A. Institutional

3. Department/School:

Member, Award Committee. (September 2023 - Present).

Organizer, Numerical Methods for Data Science and Engineering. (September 2023 - Present).

Co-Chair, Statistics Teaching Forum. (August 2023 - Present).

Member, Search Committee for Assistant Professor in Statistics. (October 27, 2025 - April 2026).

Member, Search Committee for Open Rank Tenure Line Faculty in Data Science, Machine Learning, and Artificial Intelligence. (October 28, 2024 - April 2025).

Member, Library Committee. (August 2022 - May 2024).

Coordinator, Statistics Teaching Forum. (September 2021 - May 2022).

B. Professional:

Editorial Review Board Member, Frontiers in Systems Biology. (September 2021 - Present).

Reviewer / Referee, Statistical Papers. (October 2025 - December 2025).

Reviewer / Referee, PLOS ONE. (October 2025).

Reviewer / Referee, PLOS ONE. (September 2025).

Reviewer / Referee, Mathematics. (August 2025).

Reviewer / Referee, Mathematics. (July 2025 - August 2025).

Reviewer / Referee, PLOS ONE. (July 2025 - August 2025).

Reviewer / Referee, Axioms. (June 2025).

Reviewer / Referee, PLOS ONE. (June 2025).

Reviewer / Referee, Symmetry. (June 2025).

Reviewer / Referee, Axioms. (May 2025).

Reviewer / Referee, PLOS ONE. (May 2025).

Reviewer / Referee, Mathematics. (March 2025 - April 2025).

Reviewer / Referee, Mathematics. (January 2025 - February 1, 2025).

Reviewer / Referee, Discover Artificial Intelligence. (January 2025 - January 30, 2025).

Reviewer / Referee, IEEE Transactions on Computational Biology and Bioinformatics. (January 2025 - January 22, 2025).

Reviewer / Referee, BMC Medical Informatics and Decision Making. (December 2024 - January 10, 2025).

Reviewer / Referee, Mathematics. (December 2024).

Reviewer / Referee, Axioms. (November 2024 - December 2024).

Reviewer / Referee, Statistics Innovation. (November 2024 - December 2024).

Reviewer / Referee, Axioms. (October 2024 - November 2024).

Reviewer / Referee, Mathematics. (September 2024 - October 2024).

Reviewer / Referee, Mathematics. (August 2024 - September 2024).

Reviewer / Referee, Mathematics. (June 2024 - July 2024).

Reviewer / Referee, Mathematics. (May 2024 - June 2024).

Reviewer / Referee, Analytics. (April 2024 - May 2024).

Reviewer / Referee, Axioms. (March 2024 - April 2024).

Reviewer / Referee, Mathematics. (February 2024 - March 8, 2024).

Reviewer / Referee, Statistics and Probability Letters. (January 2024).

Reviewer / Referee, Frontiers in Systems Biology. (December 2023 - January 2024).

Reviewer / Referee, Bioinformatics. (October 2023).

Reviewer / Referee, Bioinformatics. (October 2023).

Reviewer / Referee, Scientific Reports. (October 2023).

Reviewer / Referee, Statistics and Probability Letters. (October 2023).

Reviewer / Referee, Nature Communications. (September 2023).

Reviewer / Referee, PLOS ONE. (July 2023 - August 2023).

Reviewer / Referee, Bioinformatics. (July 2023).

Reviewer / Referee, Scientific Reports. (July 2023).

Reviewer / Referee, Nature Communications. (June 2023 - July 2023).

Mentor, ASA DataFest 2023. (April 1, 2023).

Reviewer / Referee, BMC Genomic Data. (March 2023).

Reviewer / Referee, BioData Mining. (March 21, 2022 - April 21, 2022).

Reviewer / Referee, BioData Mining. (February 27, 2022 - March 27, 2022).

Reviewer / Referee, BMC Genomics. (March 10, 2022 - March 17, 2022).

Reviewer / Referee, Biometrical Journal. (February 3, 2022 - March 3, 2022).

Reviewer / Referee, Frontiers in Systems Biology. (February 24, 2022 - March 2, 2022).

Reviewer / Referee, BioData Mining. (January 3, 2022 - February 3, 2022).

Reviewer / Referee, BMC Genomic Data. (December 2021 - January 2022).

Reviewer / Referee, Biometrical Journal. (October 2021 - November 2021).

Reviewer / Referee, Statistics and Probability Letters. (June 2021 - August 2021).

Reviewer / Referee, BioData Mining. (May 2021 - June 2021).

Reviewer / Referee, Journal of Computational Statistics and Data Analysis. (October 2020 - December 2020).

D. Organization Memberships:

Institute of Mathematical Statistics (IMS). (March 2024 - Present).

International Chinese Statistical Association (ICSA). (2019 - Present).

American Statistical Association (ASA). (2014 - Present).

E. Service Honors and Awards:

Award / Honor Recipient: 2022 Outstanding Review Editor, Editorial Office of Frontiers in Systems Biology.
October 3, 2022 - Present